# NM4 $SpO_2$ Amplification Board Installation

## INSTALLATION PROCEDURE

This procedure provides instructions for installing a speaker amplification board on $SpO_2$ assembly P/N 4111098 or 4112240.

Parts required are: 4112475 PCB Assembly, $SpO_2$ Amplifier, NM4
4112509-001 Cable Assembly, $SpO_2$ Speakers

CAUTION: Use proper ESD control during all removal and installation procedures.

1. Turn the System Power switch to STANDBY and remove AC power from the machine.

2. Disable all circuit breakers by pulling out each button with a knife or sharp object.

CAUTION: Do not plug or unplug the remote display cable with power applied.

3. Disconnect the following items from the patient interface panel on the left side of the monitor box:

   --Remote Display cable
   --BP Cuff & BP Gauge lines
   --Pulse Oximeter cable
   --Datagrip cable (if applicable)

4. Remove the disposable reservoir (and green filter, if so equipped) from its holder.

5. Remove the screws holding the monitor box cover, and carefully lift the cover from the monitor box.

6. Locate the $SpO_2$ speaker in the monitor box. Early installations have the speaker on the $SpO_2$ assembly; later installations have the speaker on a bracket attached to the card cage assembly. See Figure 1.

7. Disconnect and remove the existing cable between the $SpO_2$ speaker and J21 on the backplane.

8. Verify that the $SpO_2$ speaker is oriented as shown in Figure 2, with its (+) terminal to the right.

9. Carefully install the amplification board (P/N 4112475) on the $SpO_2$ speaker terminals (Figure 3).

## INSTALLATION PROCEDURE (continued)

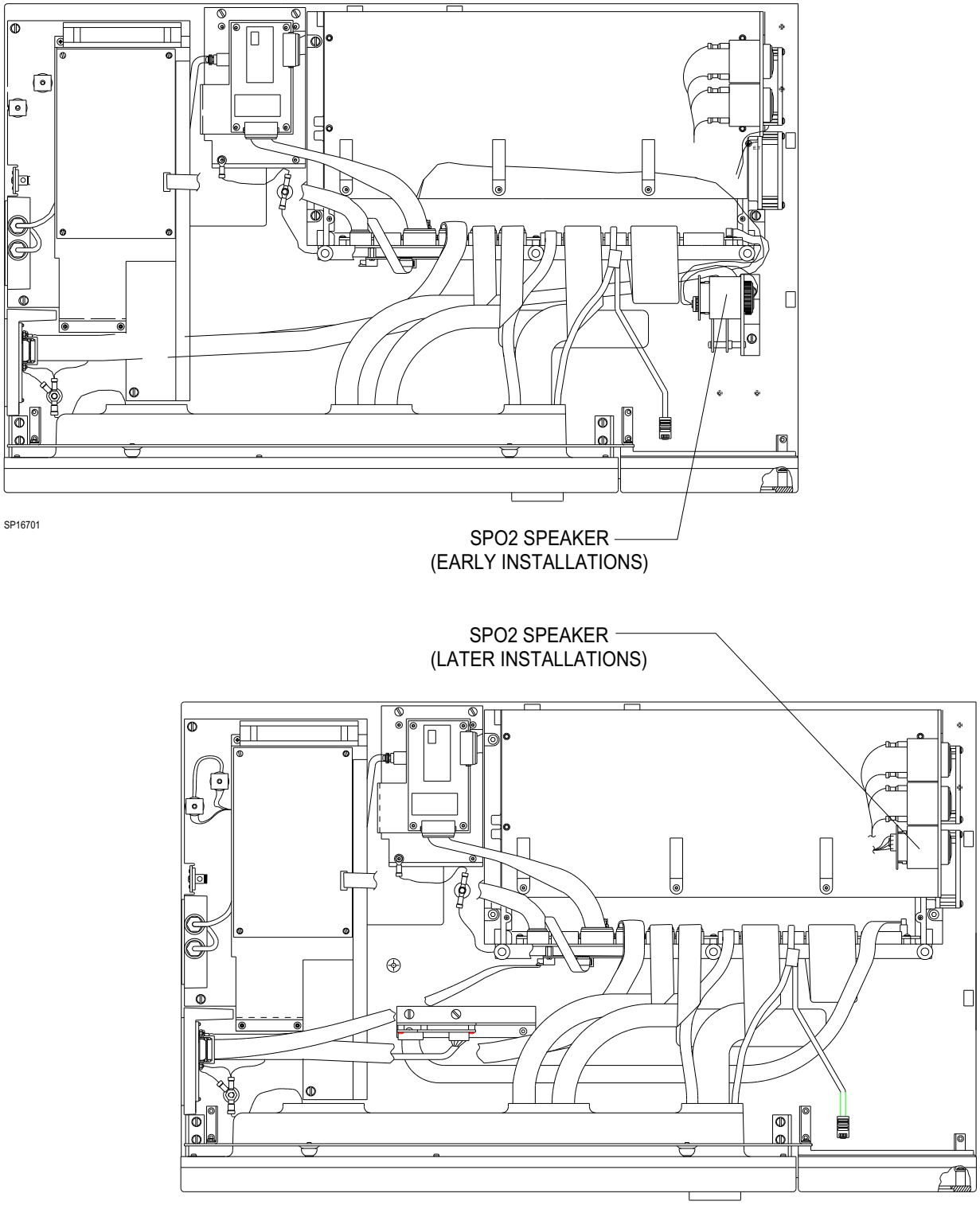
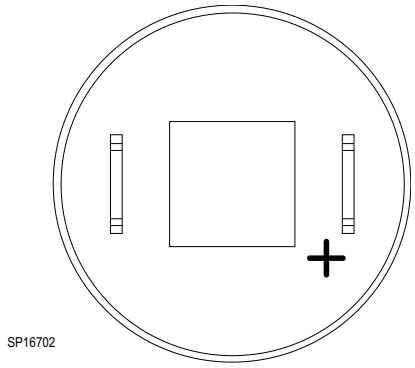



**Figure 1: TOP VIEW OF NM4 MONITOR BOX**

**INSTALLATION PROCEDURE (continued)**




REAR VIEW OF
SPEAKER SHOWING
POLARITY MARK

**Figure 2: SPEAKER ORIENTATION**

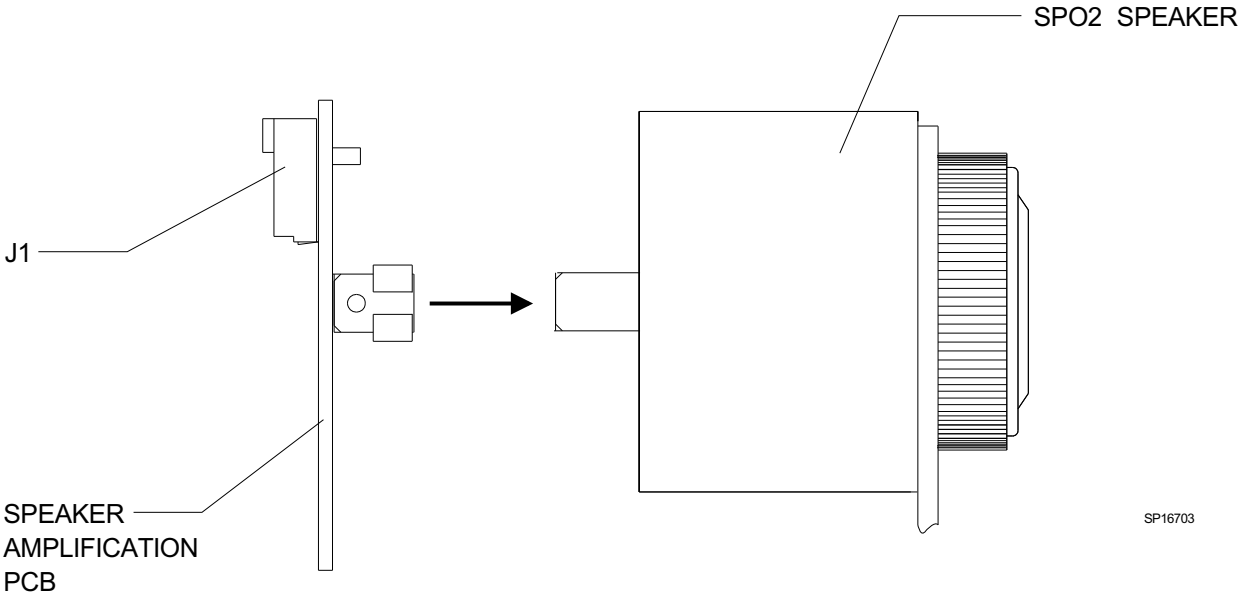



**Figure 3: AMPLIFICATION PCB INSTALLATION**

## INSTALLATION PROCEDURE (continued)

10. Connect the new $SpO_2$ speaker cable (P/N 4112509-001) as follows:

    -- Connect the 2-conductor end (red & brown wires) to J21 on the backplane PCB.

    -- Connect the 5-conductor end (yellow & orange wires) to J43 on the backplane PCB (J27 on older (P/N 4110699) backplanes).

    [If your $SpO_2$ assembly has a power adapter, join this connector to J2 on the power adapter PCB.]

    -- Connect the 4-conductor end (brown, red, orange, yellow wires) to J1 on the speaker amplification PCB.

11. Reinstall the monitor box cover and disposable reservoir (and green filter, if so equipped).

12. Reconnect the following items to the patient interface panel on the left side of the monitor box:

    --Remote Display cable
    --BP Cuff & BP Gauge lines
    --Pulse Oximeter cable
    --Datagrip cable (if applicable)

13. Enable the circuit breakers by pressing in each button.

14. Turn the System Power switch to the ON position.

15. Perform a complete PMS procedure on the machine.

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